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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/707,722

01/07/2004

Steven H. Voldman

BUR920030097US1

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02/15/2006

SCHMEISER, OLSEN + WATTS

3 LEAR JET LANE

SUITE 201

LATHAM, NY 12110

EXAMINER

JACKSON JR, JEROME

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/707,722	Applicant(s) VOLDMAN, STEVEN H.	
	Examiner Jerome Jackson Jr.	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is vague and indefinite as it apparently contradicts the independent claim structure where there is a definite "opening". "Configured" is also considered vague and indefinite as the final structure should have an opening according to independent claim 1 and the structure intended by "configured" is unknown. The recitation "high" is also undefined and not indicative of the exact final structure. The final structure is vague, indefinite and contradictory to the independent claim.

Claims 1-8 and 17-20, as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zambrano '320.

Zambrano shows in figures 1 and 2 a substrate layer 3, a first layer 10 with an opening, a second layer 11, and an electrode structure 12,13 and 15 on top of the second layer. Claim 1 is anticipated or obvious over Zambrano depending on one's interpretation of "on top of". Note layer 11 is deposited or diffused "on top of" layer 10 in figure 8 (column 3 lines 54-59). Claim 2 is obvious as a simple change of conductivity types from n to p and vice versa is obvious (column 4 lines 30-35) and shows that the "cathode" of the electrode structure would be in direct contact with the "first" layer. Claim 3 is likewise rejected. Claim 4 is rejected as the functional language does not

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structurally distinguish over Zambrano which likewise functions in the same manner, i.e. the breakdown is dependent on the opening size. Claim 7 is rejected as Zambrano likewise would diffuse and expand at high temperature, and furthermore, the only definite structure is an "opening" structure. Claim 8 is rejected as p or n type doping for the regions is interchangeable or obvious as stated above. Claims 17 and 20 are rejected as above.

Claims 1-8 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zambrano in view of Russ '750, of record.

Russ suggests sinker contact regions, shallow isolation between anode and cathode regions, and deep trench isolation to improve device isolation. Claims 5, 6, 18, and 19 are obvious structure.

Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

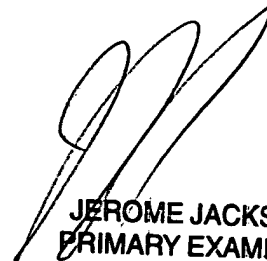
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jj



JEROME JACKSON
PRIMARY EXAMINER